

## Claims

What is claimed is:

1. Artificial turf, comprising:
  - 5 a substrate; and
  - a plurality of fibers protruding from the substrate, wherein the fibers include a chromogen.
- 10 2. The artificial turf of claim 1 wherein the chromogen is thermochromic.
- 15 3. The artificial turf of claim 1 wherein the chromogen is stress chromic.
4. The artificial turf of claim 1 wherein the chromogen is chemically chromic.
5. The artificial turf of claim 1 wherein the chromogen is coated on the surface of the fibers.
- 20 6. The artificial turf of claim 1 wherein the chromogen is included within the core of the fibers.
7. The artificial turf of claim 1 wherein the fibers are composed of the chromogen.
- 25 8. The artificial turf of claim 1 wherein the chromogen is encapsulated.
9. Artificial turf, comprising:
  - a substrate; and

a plurality of fibers protruding from the substrate, wherein the fibers respond to an increase in temperature by changing from a first color to a second color, the first color and the second color being visually distinguishable.

- 5      10. Artificial turf, comprising:  
              a substrate; and  
              a plurality of fibers protruding from the substrate, wherein the fibers respond to an elastic elongation by changing from a first color to a second color, the first color and the second color being visually distinguishable.
- 10     11. Artificial turf, comprising:  
              a substrate; and  
              a plurality of fibers protruding from the substrate, wherein the fibers respond to a change in chemical environment by changing from a first color to a second color, the first color and the second color being visually distinguishable.
- 15     12. The artificial turf of claim 9, 10, or 11 wherein the change in color is substantially reversible.
- 20     13. The artificial turf of claim 1, further comprising indicia for determining the position of a golf ball.
- 25     14. The artificial turf of claim 1, further comprising indicia for marking the boundaries of a sports field.
15. A color changing material, comprising:  
              a substrate; and

a film that includes a chromogen, wherein the film responds to a change in environmental conditions by changing from a first color to a second color, the first and second color being visually distinguishable, the film being disposed on a surface of the substrate.

5

16. The color changing material of claim 15, wherein the film changes from the first color to the second color along the path of a ball rolling on its surface.

